

Diabetes and cardiovascular disease (CVD) risk

Diabetes is a major risk factor for CVD, significantly increasing the risk of heart attack, stroke and heart failure. Embedding CVD risk assessment into routine diabetes care provides an opportunity for earlier identification and management of CVD risk.



Among people living with diabetes, CVD is the primary cause of morbidity and mortality globally.¹



About 25% of people in Australia living with diabetes are also living with CVD.²



Cardiovascular risk is also higher in people with longstanding diabetes, microvascular complications and suboptimal glycaemic control.³



High blood glucose levels:⁴

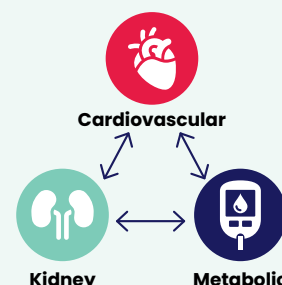
- drive endothelial dysfunction and accelerate atherosclerotic plaque development
- contribute to hypertension through endothelial dysfunction, activation of neurohormonal pathways, and increased sodium retention mediated by insulin resistance.

Understanding cardiovascular-kidney-metabolic (CKM) syndrome

Diabetes, CVD and kidney disease are closely interconnected. This relationship is increasingly recognised as CKM syndrome, a term used to describe the cluster of metabolic, kidney and cardiovascular disorders that share common risk pathways and mutually contribute to the development and accelerated progression of one another.⁵

Healthcare professionals are recommended to:⁶

- screen people living with overweight or obesity and CVD (or at high risk) for metabolic risk factors
- use therapies with cardiovascular, kidney and metabolic benefits where clinically appropriate.
- adopt a person-centred, multidisciplinary approach, involving relevant specialists and allied health to support adherence and behaviour change.



Applying the Aus CVD Risk calculator in people living with diabetes



AusCVD Risk

- Use the Aus CVD Risk calculator's diabetes specific equation to provide a more accurate risk assessment for people living with type 2 diabetes.
- For people living with diabetes, CVD risk assessment is recommended from 35 years and over.
- Identify women with a history of gestational diabetes, as they have an increased risk of developing CVD.⁷

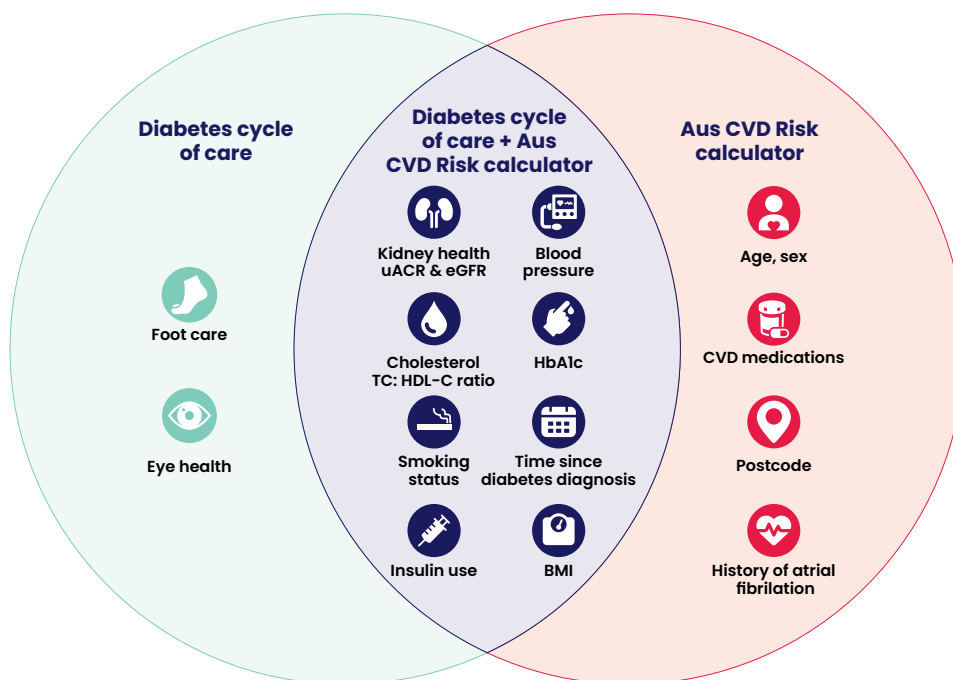
Type 2 diabetes specific variables included in the Aus CVD Risk calculator

No two people living with diabetes are the same, so it is important to consider the full range of individual diabetes related factors when assessing their risk of CVD.

Variable	Application
 Time since diagnosis of diabetes	Enter time in years.
 Glycated haemoglobin (HbA1c)	Enter HbA1c in mmol/mol or % (single non-fasting).
 Urine albumin-to-creatinine ratio (uACR)	Enter uACR in mg/mmol.
 eGFR	Enter eGFR in mL/min/1.73m ² .
 Body mass index (BMI)	Enter weight in kilograms and height in metres.
 Insulin	Record use of insulin in the 6 months before risk assessment.

Overlap in assessment of diabetes and CVD risk: opportunities for integrated care

The diabetes annual cycle of care and the Aus CVD Risk calculator share many clinical measures. Embed CVD risk assessment into routine diabetes care to support early identification and management of cardiovascular risk.



Management strategies for people living with diabetes to support CVD risk reduction

Support people to:



quit smoking



engage in regular physical activity



follow a heart-healthy eating pattern



limit alcohol use



achieve and maintain a healthy body weight



manage glucose, blood pressure and lipid levels



take medications as prescribed

Pharmacological management of diabetes and CVD

Glucose-lowering therapies with demonstrated cardiovascular benefit:

- SGLT-2 inhibitors reduce renal glucose reabsorption, promoting glucosuria. Some medications in this class have been shown to reduce cardiovascular death, kidney failure and heart failure hospitalisation in people with type 2 diabetes.⁸
- GLP-1 and GIP/GLP-1 receptor agonists improve insulin sensitivity and suppress glucagon release. These medications have been shown to improve cardiovascular outcomes in people with type 2 diabetes and support weight management.^{9,10}

CVD medications improve outcomes for people with diabetes:

- Blood pressure-lowering agents (e.g. ACE inhibitors and ARBs) and lipid-modifying therapies (e.g. statins) reduce cardiovascular risk as well as improve diabetes-related outcomes.¹¹

References

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